



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Moshe Rock et al. Art Unit : 1771
Serial No. : 09/982,720 Examiner : Jenna-Leigh Befumo
Filed : October 18, 2001
Title : DOUBLE-FACE VELOUR FABRIC ARTICLES HAVING IMPROVED
DYNAMIC INSULATION PERFORMANCE

Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

BRIEF ON APPEAL

(1) Real Party in Interest

Malden Mills Industries, Inc.

(2) Related Appeals and Interferences

There are no prior or pending appeals, interferences, or judicial proceedings related to the present application.

(3) Status of Claims

Claims 1-27, 30 and 37 are pending.

Claims 1-27, 30 and 37 are being appealed. Claim 1 is the only pending independent claim. All of the claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Lombardi et al. U.S. 4,103,518 ("Lombardi") in view of Ploch et al. U.S. 3,837,943 ("Ploch"), where the combination is either taken alone, or is in combination with at least one additional reference of record.

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(4) Status of Amendments

All amendments have been entered.

(5) Summary of Claimed Subject Matter

The claimed invention is a double-face velour fabric article comprising a knitted fabric body having a technical face, formed by a filament stitch yarn, and a technical back, formed by a filament loop yarn. The filament stitch yarn comprises heat sensitive material, and the knitted fabric body has a velour surface formed at both the technical back and the technical face.

The heat sensitive material of the filament stitch yarn responds to application of heat during processing to increase tortuosity of air flow paths through the knitted fabric body formed by interstices defined among the filament stitch yarn and the filament loop yarn of the knitted fabric body. The result is a knitted fabric body having permeability of about 110 ft³/ft²/min or less under a pressure difference of ½ inch of water across the knitted fabric body.

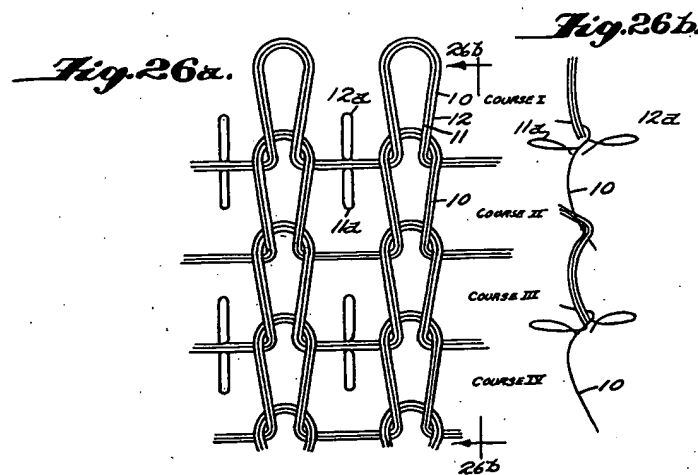
The stitch and loop yarns are interwoven together in a manner that produces air flow paths through the knitted fabric body, the air flow paths being formed by the interstices defined among the intergaged loops of the knitted fabric.

(6) Grounds of Rejection

Claims 1-9, 16-18, 25, 30 and 37 stand rejected under 35 U.S.C. §103(a) as being obvious and therefore unpatentable over Lombardi et al. U.S. 4,103,518 in view of Ploch et al. U.S. 3,837,943. Claims 10-13 stand rejected under 35 U.S.C. §103(a) as being obvious and therefore unpatentable over Lombardi et al. '518 in view of Ploch et al. '943, and further in view of Richards et al. U.S. 5,557,950. Claim 24 stands rejected under 35 U.S.C. §103(a) as being obvious and therefore unpatentable over Lombardi et al. '518 in view of Ploch et al. '943, and further in view of Callaway U.S. 5,520,022. Claims 14 and 15 stand rejected under 35 U.S.C. §103(a) as being obvious and therefore unpatentable over Lombardi et al. '518 in view of Ploch et al. '943 and Richards '950, and further in view of Wood et al. US Pub. No. 2002/0124365.

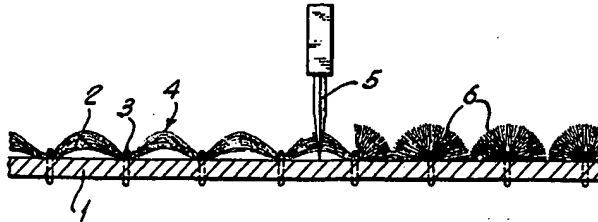
(7) Argument

Lombardi et al. '518 describes a machine for knitting fabrics having terry loops at one or both surfaces. The fabric is formed by knitting together yarns to form a single layer of interengaged loops with air flow paths through the knitted fabric body formed by the interstices defined among the interengaged loops of the knitted fabric, providing terry loops which are securely anchored in the knitted construction. (See col. 1, lines 16-19 and Figs. 26a and 26b.) The loops may be sheared to form a double face knitted velour fabric (col. 1, lines 25-27), e.g., of structure similar to Applicants' base fabric. Lombardi et al. '518 provides no teaching, nor any suggestion, for Applicants' invention of including heat sensitive material in the yarns of the knitted fabric nor is Lombardi et al. '518 relied upon for such a teaching. An illustration of the knitted fabric disclosed in Lombardi et al. '518 is provided below.



The Examiner asserts that the deficiency in Lombardi et al. '518 is remedied by Ploch.¹ Applicants disagree. Ploch does not teach or suggest using a heat sensitive material to form a face of a knitted fabric or increase totuosity of air flow path through a knitted fabric body. Ploch et al. '943 describes a compound fabric product and method for making this product. A layer of yarns or fiber materials is placed upon a base fabric, and the yarns or fiber materials are then sewn onto the base fabric by longitudinally extending parallel seams (col. 1, lines 3-11), e.g. of quilt stitch or chain stitch (col. 1, lines 24-28). This product is depicted in a related reference, Ploch et al. U.S. 3,168,883, a picture and description of which is provided below.

¹ Although the Examiner has rejected the claims over U.S. Patent No. 3,837,943, the figure which is referred to by the Examiner is in a different Ploch reference, U.S. Patent No. 3,168,883. Therefore, each of these references will be addressed as appropriate in the appeal brief.



Yarns of fiber fleeces 2 are placed on a ground cloth 1 transverse to the longitudinal direction of the ground. The juncture between the ground 1 and the pile-forming yarns 2 is produced by longitudinally arrayed seams 3. The longitudinal seams 3 are arranged closely side by side in the manner of quilting seams and may be sewed to the ground by, for example, multi-needle machines. Since a very tight seam is necessary to obtain a particularly resistant velvet, the use of shrinkable sewing threads such as polyvinylchloride is advisable. (See U.S. Pat. No. 3,168,883, the paragraph bridging cols. 1 and 2.)

Although not apparent from the figure above, the Examiner notes that the base fabric of Ploch et al. '883 can be a knitted fabric (See col. 1, lines 40-45). The Examiner further notes that Ploch et al. '883 describes the use of heat shrinkable threads to stitch the yarns to the base fabric. With these two disclosures, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the ground yarn in the fabric disclosed in Lombardi et al. '518 with the shrinkable sewing threads of Ploch. The motivation, according to the Examiner, would be to increase the bond between the ground fabric and the pile yarn, producing a stable and wear resistant compound fabric. (See Office Action Mailed September 26, 2003, page 5).

Ploch does not suggest that heat sensitive yarns be used to form one of the faces of the fabric as in the case in the claimed invention. Instead, Ploch uses such yarns merely to form lines of stitches that interconnect two separate fabrics. Thus, it would not have been obvious to replace Lombardi's ground yarns with yarns that Ploch uses for a very different purpose.

Nor would the artisan have been motivated to make this modification "to increase the bond between the ground fabric and the pile yarn, producing a stable and wear resistant compound fabric," as asserted by the Examiner. The terry construction disclosed in Lombardi

“contemplates the formation of terry loops which are knitted jointly with a ground yarn into the base or ground fabric and thus securely anchored in the knitted construction.” (Lombardi et al. ‘518, col. 1, lines 16-19.) Because Lombardi et al. ‘518 discloses a method of “securely anchoring” terry loops to a ground fabric, one of skill in the art would have no motivation to modify the filaments disclosed in Lombardi with the thermally sensitive filament disclosed in Ploch.

In a subsequent office action, the Examiner offers alternative motives to combine the cited references. Specifically, the Examiner asserts that it would have been obvious to use a thermally sensitive yarn, as employed by Ploch, as the ground yarn in Lombardi, since Ploch discloses that the thermally sensitive yarns assist in bonding the pile-forming yarns to the ground fabric, increase the bulk of the overall fabric, and fill needle holes in the ground fabric. (See Office Action Mailed October 27, 2004, page 5.)

Again, the motives to combine advanced by the Examiner are not supported by the teachings of the references. Ploch provides no motivation to use heat sensitive material in the formation of the base fabric. Ploch et al. ‘943 describes the process “as effecting the formation of the bulky seam” (col. 4, lines 3-4), not the creation of a bulkier fabric as asserted by the Examiner. The heat sensitive yarn in Ploch is not used to form the base fabric as in the claimed invention, but instead is used to attach yarn to the base fabric. Therefore, Ploch did not disclose or suggest using heat sensitive yarns to change the bulk or permeability of the base fabric.

Nor would the artisan have been motivated to modify Lombardi by a desire to fill needle holes since Lombardi does not teach or disclose stitching and thus there are no needle holes to fill. Nor would a simple filling-in of the needle holes created during the stitching process disclosed in Ploch in any way significantly alter the permeability (or the bulkiness) of the base fabric.

The only suggestion for use of a thermally sensitive material to form the face of a knitted fabric is in Applicants’ own disclosure. Applicants therefore submit that the Examiner’s assertion of obviousness is a conclusory statement improperly established by “using hindsight reconstruction of the claimed invention, using Applicants’ structure as a template, and selecting elements from the references to fill the gaps.” *In re Gorman*, 993 F.2d 982 (Fed. Cir. 1991). Applicants therefore request that the rejection be withdrawn and the claims be found allowable.

Claims 10-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lombardi in view of Ploch and in further view of Richards. Claim 24 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Lombardi in view of Ploch and in further view of Callaway. Claims 14 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lombardi in view of Ploch and in further view of Wood. We respectfully traverse.

These claims depend from claim 1 and thus are patentable for at least the same reasons. Moreover, none of Richards, Callaway, or Wood provides motivation for use of a heat sensitive filament stitch yarn to form a knitted fabric body, where the heat sensitive material of the stitch yarn responds to application of heat during processing to increase tortuosity of the air flow paths, as featured in the pending claims, nor are these references relied upon for such a teaching. Without such a teaching, the combinations of references above fail to provide a *prima facie* case of obviousness. Accordingly, Applicants request that the corresponding rejections be withdrawn.

The brief fee of \$500 is enclosed. Please apply any other charges or credits to Deposit Account No. 06-1050, referencing attorney docket no. 10638-025001.

Respectfully submitted,

Date: _____

May 31, 2006

Catherine M. McCarty
Catherine M. McCarty
Reg. No. 54,301

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

Appendix of Claims

1. A double-face velour fabric article comprises a knitted fabric body having a technical face, formed by a filament stitch yarn, and a technical back, formed by a filament loop yarn, said filament stitch yarn comprising heat sensitive material, said knitted fabric body having a velour surface formed at both said technical back and said technical face, and said heat sensitive material of said filament stitch yarn responding to application of heat during processing to increase tortuosity of air flow paths through the knitted fabric body formed by interstices defined among the filament stitch yarn and the filament loop yarn of the knitted fabric body with a result of said knitted fabric body having permeability of about $110 \text{ ft}^3/\text{ft}^2/\text{min}$ or less under a pressure difference of $\frac{1}{2}$ inch of water across the knitted fabric body.

2. The double-face velour fabric article of claim 1, wherein said heat sensitive material comprises hot melt material.

3. The double-face velour fabric article of claim 1, wherein said heat sensitive material comprises heat shrinkable material.

4. The double-face velour fabric article of claim 1, wherein said heat sensitive material is selected from the group consisting of polypropylene, polyester, and polyamide.

5. The double-faced velour fabric article of claim 1, claim 2, claim 3, or claim 4, wherein said heat sensitive material responds to application of dry heat.

6. The double-faced velour fabric article of claim 1, claim 2, claim 3, or claim 4, wherein said heat sensitive material responds to application of wet heat.

7. The double-faced velour fabric article of claim 6, wherein said heat sensitive material responds to application of wet heat applied by steam.

8. The double-faced velour fabric article of claim 6, wherein said heat sensitive material responds to application of wet heat applied by hot water.

9. The double-faced velour fabric article of claim 1, claim 2, claim 3, or claim 4, wherein said heat sensitive material responds to application of heat at about 212°F to about 450°F applied for about 2 minutes to about 60 minutes.

10. The double-faced velour fabric article of claim 1, claim 2, claim 3, or claim 4, wherein said filament stitch yarn comprises elastomeric material.

11. The double-faced velour fabric article of claim 10, wherein said elastomeric material comprises spandex.

12. The double-faced velour fabric article of claim 10, wherein filaments of said heat sensitive material and filaments of said elastomeric material are commingled together.

13. The double-faced velour fabric article of claim 10, wherein filaments of said heat sensitive material and filaments of said elastomeric material are plaited together.

14. The double-faced velour fabric article of claim 10, the fabric comprising raised fibers on the velour surface of at least one of the technical face and the technical back, wherein the raised fibers are-entangled, including in and/or through the interstices defined among the filament stitch yarn and the filament loop yarn of the knitted fabric body toward the other of the technical face and the technical back, thereby to increase tortuosity of the air flow paths through the knitted fabric body.

15. The double-face velour fabric article of claim 14, wherein raised fibers of the technical back are entangled, including in and/or through the interstices defined among the filament stitch yarn and the filament loop yarn of the knitted fabric body, toward the technical face.

16. The double-faced velour fabric article of claim 1, claim 2, claim 3, or claim 4, wherein said filament stitch yarn is a cored yarn comprising a core and a sheath, said sheath comprising hot melt material.

17. The double-face velour fabric article of claim 16, wherein said hot melt material is selected from the group consisting of polypropylene, polyester and polyamide.

18. The double-face velour fabric article of claim 16, wherein said core comprises a material selected from the group consisting of polyester and nylon.

24. The double-face velour fabric article of claim 1, wherein said filament loop yarn is textured.

25. The double-face velour fabric article of claim 1, wherein said filament stitch yarn is textured.

30. The double-face velour fabric article of claim 1, wherein said knitted fabric body has permeability of about $70 \text{ ft}^3/\text{ft}^2/\text{min}$ or less.

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37. (Previously Presented) The double-face velour fabric article of claim 1, wherein at least one of said filament stitch yarn and said filament loop yarn is a yarn of fine denier filaments or fibers.

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Evidence Appendix

None.

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Related Proceedings Appendix

None.